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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/879,176	06/13/2001	David Chengson	0023-0009	3640

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EXAMINER

HAN, CLEMENCE S

ART UNIT PAPER NUMBER

2665

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/879,176	CHENGSON ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Clemence Han	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-21 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-7, 22, 23, 25-31, 33 and 35 is/are rejected.
- 7) ☒ Claim(s) 3, 24, 32 and 34 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2/27/03</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Objections*

1. Claim 32 is objected to because of the following informalities: There is a typographical error in the line 3, "compliment". Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 1, 2, 4-7, 22, 23, 25-31, 33 and 35 are rejected under 35 U.S.C. 102(e) as being anticipated by Lippett et. al. (US Patent 6,667,993).

Regarding claim 1, Lippett teaches a communication method comprising; receiving data from a first plurality of data lines 150, each data line providing data at a predetermined rate (Column 5 Line 55-57); serializing the received data (Column 5 Line 57-59); providing the serialized data over a link (Column 5 Line 59-60); deserializing the serialized data to create deserialized data (Column 9 Line

29-30); and providing the deserialized data to a second plurality of data lines 160 corresponding to the first plurality of data lines 150.

Regarding claim 2, Lippett teaches the act of serializing including: multiplexing data from a first and a second of the first plurality of data lines onto a single data line clocked at a multiple of the predetermined rate (Column 5 Line 55-60).

Regarding claim 4, Lippett teaches generating a clock signal and determining the phase of the clock signal based on a repeating edge in the data on the single data line 904 (Column 11 Line 5-9).

Regarding claim 5, Lippett teaches the link including an optical fiber for carrying the serialized data (Column 22 Line 25-28).

Regarding claim 6, Lippett teaches detecting a predetermined pattern in the deserialized data (step 1604 in Column 20 Line 37-40); and aligning the deserialized data with other data based on the detected pattern (step 1608 in Column 20 Line 41-42).

Regarding claim 7, Lippett teaches the act of providing serialized data including; transmitting the serialized data asynchronously through the link (Column 19 Line 17-20).

Regarding claim 22, Lippett teaches a communication system comprising; means 121 for receiving data from a first plurality of data lines 150, each data line providing data at a predetermined rate (Column 5 Line 55-57); means 450 for serializing the received data (Column 5 Line 57-59); a circuit for transmitting the serialized data 460, 115 (Column 5 Line 59-60); means 706 for deserializing the serialized data to create deserialized data (Column 9 Line 29-30); and means 132 for providing the deserialized data to a second plurality of data lines 160.

Regarding claim 23, Lippett teaches the means for serializing further comprises; means for multiplexing data from a first and a second of the plurality of data lines onto a single data line at a rate different from the predetermined rate (Column 5 Line 55-60).

Regarding claim 25, Lippett teaches means 704 for generating a clock signal (BIT\_CLOCK in Figure 9) based on the serialized data 904 (Column 11 Line 5-9).

Regarding claim 26, Lippett teaches means 704 for aligning the phase of a clock signal based on the serialized data 904 (Column 11 Line 1-9).

Regarding claim 27, Lippett teaches an optical link for transmitting the serialized data (Column 22 Line 25-28).

Regarding claim 28, Lippett teaches means 710 for detecting a predetermined pattern in the deserialized data (step 1604 in Column 20 Line 37-

40); and means 730 for aligning data from the data lines based on the detected pattern (step 1608 in Column 20 Line 41-42).

Regarding claim 29, Lippett teaches data on the first plurality of data lines is provided synchronously with a clock signal (Column 20 Line 35-37) and wherein the serialized data is provided asynchronously (Column 19 Line 17-20).

Regarding claim 30, Lippett teaches a network device for transmitting information over a link, the network device comprising; a component 121 configured to receive data signals at a predetermined rate (Column 5 Line 55-57) and to output the data signals to a plurality of data lines 150, the component periodically inserting a predetermined pattern 200 into the received data signals (Column 20 Line 35-37); a plurality of multiplexers 450 each connected to a subset of the plurality of data lines 150, the plurality of multiplexers 450 combining data signals from the subset of the data lines (Column 5 Line 57-60); and transmitters 460 connected to the plurality of multiplexers 450, the transmitters receiving the combined data signals from the multiplexers and transmitting the combined data signals over the link 115 (Column 5 Line 59-60).

Regarding claim 31, Lippett teaches the link is an optical link (Column 22 Line 25-28).

Regarding claim 33, Lippett teaches a network device for receiving information, the network device comprising; receivers 702 connected to a link 701, the receivers receiving the information from the link and converting the information to first data signals and transmitting the data signals on data lines (Column 9 Line 24-28); a first demultiplexer 706 connected to the data lines, the demultiplexer 706 converting the first data signals into second and third data signals 771, and outputting the second data signal based on a clock signal and outputting the third data signal based on the clock signal (Column 9 Line 29-30); a clock recovery circuit 704 connected to the data lines, the clock recovery circuit generating the clock signal (BIT\_CLOCK in Figure 9) based on the first data signals 904 and providing the clock signal to the first demultiplexer 706; and a receiver 710, 730 connected to receive the second and third data signals, the receiver analyzing the second and third data signals for the presence of a predetermined pattern (step 1604 in Column 20 Line 37-40), the receiver 710, 730 using the predetermined pattern to align bits and correct transposed bits in the second and third data signals (step 1608 in Column 20 Line 41-42).

Regarding claim 35, Lippett teaches the network device is a router 120, 130.

***Allowable Subject Matter***

4. Claim 8-21 are allowed.

5. The following is an examiner's statement of reasons for allowance:

Independent claims 8, 13 and 18 recite multiplexing a data signal with the complement of the data signal.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

6. Claim 3, 24, 32 and 34 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: each claim recites multiplexing a data signal with the complement of the data signal.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show the state of the art with respect to the clock recovery in general.

U.S. Patent 6,493,359 to Sorgi et al.

U.S. Patent 6,323,793 to Howald et al.



U.S. Patent 6,667,994 to Farhan

U.S. Patent 6,618,395 to Kimmitt

U.S. Patent 6,738,392 to Thurston

U.S. Patent 6,549,595 to Den Besten et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clemence Han whose telephone number is (571) 272-3158. The examiner can normally be reached on Monday-Thursday 7 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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C. H

Clemence Han  
Examiner  
Art Unit 2665

A handwritten signature in black ink, appearing to read 'Alpus H. Hsu', with a stylized flourish at the end.

ALPUS H. HSU  
PRIMARY EXAMINER